

### Abstract of the Disclosure

In an optical filter configured by serially connecting three Mach-Zehnder interferometers, an amount of a change in the optical path to be assigned to two optical path change units to control the filter extinction ratio of the optical filter is set based on an equation indicating the relationship among the filter average insertion loss and the filter extinction ratio of the optical filter and the amount of a change in the optical path provided for the two optical path change units.